

II. CLAIMS

1. A lighting system comprising:

a driver circuit including a source of AC voltage,

an electroluminescent panel with a plurality of panel regions configured to emit visible light when AC voltage is applied thereto,

each panel region having a given capacitance and being selectively connectable to the source of AC voltage,

a substitute capacitor associated with each panel region, the substitute capacitor having a capacitance that is substantially equal to the capacitance of the associated panel region,

the substitute capacitor being connected to the source of AC voltage when the associated panel region is not connected to the source of AC power and vice versa.

2. A lighting system according to claim 1, wherein the driver circuit comprises a plurality of current flow control devices coupled to the electrodes of the panel regions and to the electrodes of the substitute capacitors.

3. A lighting system according to claim 2, wherein the current flow control devices comprise switches that alternately charge the panel sections and the associated substitute capacitors.

4. A lighting system according to claim 1, wherein the driver circuit further comprises a controller configured to control the current flow control devices.

5. A lighting system according to claim 1, wherein the panel regions and the substitute capacitors are formed in a single thin film.

6. A lighting system according to claim 5, wherein the panel regions comprise;

an emission layer between a transparent front electrode and a second electrode, and

a substitute capacitor layer between the second electrode and a rear electrode.

7. A lighting system according to claim 1, wherein the AC voltage source is a battery driven step up converter.

8. A thin film electroluminescent panel comprising;

an emission layer between two electrodes, and

a substitute capacitor layer between two electrodes.

9. A thin film electroluminescent panel according to claim 8, wherein the emission layer is arranged in between a transparent front electrode and a second electrode, and the substitute capacitor layer is arranged between the second electrode and a rear electrode.

10. A thin film electroluminescent panel according to claim 9, wherein the substitute capacitor layer and the emission layer are formed by one and the same electrolytic material.

11. A thin film electroluminescent panel according to claim 9, wherein the electroluminescent panel comprises a plurality of panel regions each having an emission layer and a substitute capacitor layer.

12. A lighting system comprising:

an electroluminescent panel configured to emit visible light when AC voltage is applied thereto,

the electroluminescent panel comprising:

an emission layer between two electrodes,

an elimination layer between two electrodes, the elimination layer being arranged below the emission layer, and

a driver circuit including a voltage supply source for supplying AC voltage to the electrodes with the emission layer in between and for supplying AC voltage in opposing phase to the electrodes with the elimination layer in between.

13. A lighting system according to claim 12, wherein the emission layer is compressed when the electrodes with the emission layer there between are charged and the emission layer is decompressed when the electrodes with the emission layer there between are discharged.

14. A lighting system according to claim 13, wherein the elimination layer is compressed when the electrodes with the elimination layer there between are charged and the elimination layer is decompressed when the electrodes with the elimination layer there between are discharged.

15. A lighting system according to claim 14, wherein the rate of compression of the emission layer upon charging is substantially equal to the rate of discharging of the elimination layer upon decompression and vice versa, so as to substantially eliminate any changes in the thickness of the overall film.

16. A lighting system according to claim 12, wherein the emission layer is arranged between a transparent front electrode and a second electrode, and the elimination layer is arranged between the second electrode and a rear electrode.

17. A lighting system according to claim 16, wherein the elimination layer and the emission layer are formed by one and the same electrolytic material.

18. A lighting system panel according to claim 12, wherein the electroluminescent panel comprises a plurality of panel regions each having an emission layer and an elimination capacitor layer.

19. A thin film electroluminescent panel comprising:

an emission layer between two electrodes, and

an elimination layer between two electrodes, the elimination layer being arranged below the emission layer.

20. A thin film electroluminescent panel according to claim 19, wherein the emission layer is arranged between a transparent front electrode and a second electrode, and the elimination layer is arranged between the second electrode and a rear electrode.

21. A thin film electroluminescent panel according to claim 20, wherein the emission layer and the elimination layer are formed by substantially identical layers of dielectric material.

22. A thin film electroluminescent panel according to claim 21, wherein both the emission layer and the elimination layer are provided with an electroluminescent phosphor and either the second electrode or the rear electrode is transparent to the light emitted by the electroluminescent phosphor.

23. A thin film electroluminescent panel according to claim 19, wherein the emission layer and the elimination layer have substantially the same relative compressibility in response to electric charges applied to the respective electrodes.

24. A thin film electroluminescent panel according to claim 19, wherein the emission layer and the elimination layer are intended for operation in phase opposition so that any changes in layer thickness in one of the layers is offset by opposite changes in layer thickness of the other layer.

25. A thin film electroluminescent panel with a plurality of panel regions that are configured to emit visible light when AC voltage is applied thereto, the electroluminescent panel regions comprising:

an upper emission layer between two electrodes,

an elimination layer between two electrodes, and

a substitute capacitor layer between two electrodes.

26. An electroluminescent panel according to claim 25, wherein the upper emission layer of each panel region has a given capacitance, and wherein a substitute capacitor layer with a substantially identical capacitance is associated with the emission layer of each panel region.

27. An electroluminescent panel according to claim 25, wherein the emission layer is arranged between a transparent front electrode and a second electrode, the elimination layer is arranged between the second electrode and a third electrode, and the substitute capacitance layer is arranged between a fourth electrode and a rear electrode.

28. An electroluminescent panel according to claim 27, wherein the fourth electrode is arranged below the third electrode with an isolation layer there between.

29. An electroluminescent panel according to claim 25, wherein the emission layer, the elimination layer and the substitute capacitance layer are formed by substantially identical layers of dielectric material.

30. A thin film electroluminescent panel according to claim 29, wherein both the emission layer and the elimination layer are provided with an electroluminescent phosphor and the second electrode is transparent to the light emitted by the electroluminescent phosphor.

31. A thin film electroluminescent panel according to claim 25, wherein the emission layer, the substitute capacitor layer and the elimination layer have substantially the same relative compressibility in response to electric charges applied to the respective electrodes.

32. A thin film electroluminescent panel according to claim 25, wherein the emission layer and the substitute capacitor layer are intended for alternate operation in phase opposition with the elimination layer so that any changes in layer thickness in the emission layer or in the substitute capacitance layer, respectively, are offset by opposite changes in changes in layer thickness of the elimination layer.

33. A lighting system comprising a thin film electroluminescent panel with a plurality of panel regions that are configured to emit visible light when AC voltage is applied thereto, the electroluminescent panel regions comprising;

an upper emission layer between two electrodes,

an elimination layer between two electrodes,

a substitute capacitor layer between two electrodes,

the system further comprises a driver circuit comprising:

a high voltage source for supplying AC voltage in a first phase to the emission layers and the substitute capacitor

layers and for supplying AC voltage in a second opposite phase to the elimination layers,

a plurality of current flow control devices coupled to the electrodes of the emission layers and of the substitute capacitor layers of the respective panel regions, to alternately connect the respective emission layer and substitute capacitor layer to the AC voltage source.

34. A lighting system according to claim 33, wherein the driver circuit further comprises a plurality of switches to individually activate and deactivate panel regions and a controller configured to control the current flow control devices.

35. A lighting system according to claim 33, wherein the AC voltage source is a battery driven step up current converter.

36. A lighting system according to claim 33, wherein a substitute capacitor layer is arranged below each emission layer, the respective substitute capacitor layers having a capacitance that is substantially equal to the capacitance of the emission layer above, the substitute capacitor layer being connected to the source of AC voltage when the emission layer above is not connected to the source of AC power and vice versa.

37. A lighting system according to claim 36, wherein;

the emission layers are arranged between a transparent front electrode and a second electrode,

the elimination layers are arranged between a the second electrode and a third electrode, and

the substitute capacitor layers are arranged between a fourth electrode and a rear electrode.